UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN

LECO CORPORATION, a Michigan corporation,

Plaintiff,

v.

THERMO ELECTRON CORPORATION, a Virginia corporation,

and

THERMO FINNIGAN CORPORATION, a Virginia corporation,

Defendants.

Case No.: 1:03CV0853

COMPLAINT FOR PATENT INFRINGEMENT and UNFAIR COMPETITION

David W. McKeague
U.S. District Judge

DEMAND FOR JURY TRIAL

COMPLAINT

LECO Corporation ("LECO") states:

THE PARTIES

1. LECO is a Michigan corporation with its principal place of business at 3000 Lakeview Avenue, St. Joseph, MI 49085-2396, U.S.A.

2. Upon information and belief, Thermo Electron Corporation ("Electron") is a corporation organized and existing under the laws of Virginia, with a principal place of business at 81 Wyman Street, Waltham, MA 02451.

3. Upon information and belief, Thermo Finnigan Corporation ("Finnigan") is a Delaware corporation with a principal place located at 355 River Oaks Parkway, San Jose, CA, 95134-1991.

4. Upon information and belief, Electron owns, operates, and controls Finnigan. The two companies are collectively referred to as "Thermo."

5. Unless otherwise specified, the acts stated in this Complaint were committed by, on behalf of, or for the benefit of Thermo.

NATURE OF THE ACTION

6. This is an action for patent infringement and unfair competition.

7. Count I of the Complaint avers the defendants jointly and severally have infringed, contributed to the infringement of, and/or actively induced others to infringe LECO's U.S. Patent No. 5,175,430 ("the Patent").

8. Count II of the Complaint avers the defendants jointly and severally have competed and continue to compete unfairly with LECO by copying and willfully using well-known features of LECO's mass spectrometers and by otherwise causing customer confusion.

JURISDICTION AND VENUE

9. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. This action further arises under the Lanham Act of the United States, 15 U.S.C. § 1125 *et seq.* This Court has subject matter jurisdiction pursuant to 28 U.S.C. § 1331 and 1338(b).

11. This Court has personal jurisdiction over the defendants because Thermo conducts business in the western district of Michigan, and because Thermo has infringed, contributed to the infringement of, and/or actively induced others to infringe LECO's Patent in this district as alleged in this Complaint. Moreover, Thermo continues to infringe, contribute to the infringement of, and/or actively induce others to infringe LECO's Patent in this district.

12. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b), 1391(c), 1391(d) and/or 1400(b), in that: a substantial part of the events giving rise to LECO's claims occurred in the western district of Michigan; each defendant is subject to personal jurisdiction in the western district of Michigan (and thus each defendant resides in the western district of Michigan).

RELATED ACTIONS

13. There are no related actions between the parties.

FACTUAL BACKGROUND

14. LECO is a designer and manufacturer of analytical scientific equipment. It specializes in devices used to analyze the molecular composition of samples. This type of instrument is generally referred to as a mass spectrometer. Mass spectrometers detect or measure the masses of molecules in the sample by first forming ions from the molecules and then detecting the ions. LECO sells its mass spectrometers to a wide range of end users throughout the United States and in numerous other countries.

15. LECO has invested substantial sums of money and expended great efforts over many years to the search for better ways to design and manufacture mass spectrometers and the associated operational software. LECO's research and development have yielded many innovations for which LECO has sought and obtained patents. LECO's patented technology

includes inventions relating to mass spectrometer designs, methods of operating such systems, software for processing the data obtained by mass spectroscopy, and associated technologies. The strength of LECO's patent portfolio is well recognized in the mass spectroscopy industry.

16. Chromatography in modern science addresses the separation of molecular components found in a mixture on the basis of each molecule's differing behavior between a static or stationary phase and a dynamic or moving phase. When the dynamic phase is gaseous, the components of the gas can be separated using a form of chromatography referred to as gas chromatography. Interaction with the static or stationary phase occurs in two forms: surface absorption and solubility in a static liquid phase. The former is referred to as absorption chromatography and the latter is referred to as partition chromatography. In each case, the sample or analyte under investigation partitions itself by reason of its chemical behavior in transitioning from the static phase to the dynamic phase. Traditionally in each chromatography processes, complete temporal separation of each of the individual components of the sample was necessary to conduct a proper analysis. Using this traditional technique, the separation occurs in a range from several minutes up to more than an hour.

17. To provide additional information from each component, a mass spectrometer is attached to the output side of the gas chromatograph. This form of analytical instrument requires a computerized data system and is the dominant analytical instrument in laboratories.

18. The separated eluent from the column is transported to the mass spectrometer for the generation and subsequent analysis of the ions.

19. To increase the rate of analysis, improvements in the mass spectrometer were developed particularly in the timing of detection, the type of detectors and software. One such development was the implementation of temporal array detectors.

20. Temporal array detectors measure the time domain either in a synchronous or a non-synchronous manner. Synchronous detectors measure in the frequency domain while non-synchronous detectors measure in the time domain.

21. With the increased rate of detection (starter detection times) offered by such mass spectrometers having non-synchronous detector systems, several full mass spectra can be obtained over the time acquired to elute a single compound from the gas chromatographic column. Using this method information about the way in which the eluent composition changes with time can be obtained.

22. In non-synchronous time-array detection (TAD), all ions ejected from the ion source after a single extraction (or data sample) are measured as ions of increasing mass that strike the ion detector in series. This increasing series of strikes occurs because the velocities of ions of smaller mass are greater than that of the larger mass ions.

23. The results of the several full mass spectra produce elution profiles where compounds of different composition produce overlapping curves or data points which can lead to misinterpretation or errors in the identification of the compounds.

24. Such prior systems were unable to achieve the sensitivities and resolutions sufficient to produce identifiable results.

25. The goals of the prior devices were to resolve data components unresolved by normal chromatography through the use of the spectral information. Since this was not practically achievable, there was no concerted effort given to achieve reduced time analysis.

26. On December 29, 1992, U.S. Patent No. 5,175,430 was duly and legally issued to Meridian Instruments, Inc of Okemos, Michigan, as assignee of the named inventors, for an invention entitled "Time-Compressed Chromatography in Mass Spectrometry." A copy of the '430 Patent is attached as Exhibit A.

27. On June 28, 1995, Meridian Instruments, Inc. assigned all right, title and interest in and to the '430 Patent to LECO as evidenced by the assignment recorded with the United States Patent and Trademark Office on July 14, 1995 under Reel 7562 and Frame Nos. 0164-0167. A copy of the assignment from Meridian Instruments to LECO is attached as Exhibit B.

28. At all times since the assignment LECO has been the owner of the entire right, title, and interest in the '430 Patent.

29. At all times since LECO has been marketing and manufacturing its scientific equipment incorporating the Patent, the Patent number has been prominently displayed on the devices or notice has appeared in literature.

30. The Patent recognizes a unique and novel solution to the problem of how to increase the rate of analysis by gas chromatography/mass spectroscopy.

31. The Patent claims a method for reducing the time required to complete an analysis of a sample using gas chromatography/mass spectrometry. The Patent also claims a novel apparatus for carrying out the method of gas chromatography/mass spectrometry.

32. The Patent covers *inter alia* a method for reducing the time required in gas chromatography/mass spectrometry analysis, comprising the compression in time of a chromatographic separation of analytes on a chromatographic column resulting in a loss of chromatographic resolution; the transport of the column eluent into a mass spectrometer ion

source; the generation of ions within the ion source; the mass analysis of the ions by rapid array detection mass spectrometry; the acquisition and computer processing of the mass spectral information including mathematical deconvolution of the overlapping chromatographic peaks; and the deconvolution constituting recovery of all of the chromatographic analytical information.

33. The Patent also protects *inter alia* a device for time-compressed chromatography including a chromatograph having a column and a sample inlet system, an interface for transporting the column eluent into a mass spectrometer ion source; a mass analyzer capable of high speed array detection; a data system for collecting, processing, storing and output of mass spectrometer data files; the processing system including the execution of algorithms appropriate for the mathematical deconvolution of overlapping chromatographic peaks; and means to compress the peaks in time whereby losses in resolution produced by the time compression are recovered by the mathematical deconvolution resident in and executed by the data system.

34. Because ion extraction cycles occur on the order of 5,000 to 10,000 per second, the invention sums successive ion detections in a time-based registry to reduce the bandwidth necessary for subsequent electronic processing and to gain a signal-to-noise improvement of the summing process.

35. The assembly performing the summation is referred to as an integrating transient recorder. The number of successive signals summed in any situation is related by the number of spectra (summed transient/signals) required per second for adequate chromatographic reconstruction.

36. The success of this method lies in part to a combined increase in the quality and density of the available data through time array detection and an intentional reduction in chromatographic (time) resolution. This results in the reduction of time required for analysis.

37. Because the strength of LECO's patent portfolio is well recognized in the scientific instrument industry, a competitor can realize significant commercial benefit if it is able to offer LECO's patented technology at a lower price point.

COUNT I - Patent Infringement Under 35 U.S.C. § 271

38. The statements and/or allegations set forth in paragraphs 1-37 are realleged and incorporated herein by reference.

39. Thermo Electron is the owner of Thermo Finnigan which is the world's largest manufacturer of mass spectrometry and chromatography equipment. Exhibit C.

40. In 2001, Thermo announced in an advertisement that it was offering for sale a time-of-flight gas chromatograph mass spectrometer under the TEMPUS brand name that provided (1) high sampling rates vital for fast gas chromatography and (2) compressed chromatography vital for highest throughput. Exhibit D.

41. Upon information and belief, Thermo's activities have included use of Thermo's Austin, Texas facility to design and manufacture the TEMPUS mass spectrometer.

42. On information and belief, defendants' TEMPUS brand mass spectrometer is a gas chromatograph time-of-flight mass spectrometer providing high sampling rates and compression of the chromatography. Thermo states in its advertising that the "capability to handle fast chromatography (0.15 second wide peaks or less) plus the use of powerful

deconvolution software (AMDIS) enables TEMPUS to generate results rapidly and accurately identifying compounds other detectors do not even see." See Exhibit D.

43. Upon information and belief, Thermo continues to infringe the '430 Patent by making, using, offering to sell, and selling, or importing, in this district and elsewhere in the United States, mass spectrometers that use or embody the patented invention.

44. Upon information and belief, Thermo has also contributed to the infringement of the '430 Patent.

45. LECO is entitled to recover from Thermo, jointly and severally, the damages sustained by LECO as a result of Thermo's wrongful acts in an amount to be proved at trial.

46. Upon information and belief, Thermo's infringement of the '430 Patent has been willful and deliberate, entitling LECO to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

47 Thermo's infringement of LECO's exclusive rights under the '430 Patent will continue to damage LECO's business, causing irreparable harm unless it is enjoined by this Court. There is no adequate remedy at law.

CONT II – Unfair Competition Under USC § 1125

48. The statements and/or allegations set forth in paragraphs 1-47 are realleged and incorporated herein by reference.

49. Thermo, jointly and severally, has unfairly competed with LECO by copying or utilizing well-known patented aspects of LECO scientific equipment and by otherwise causing customer confusion.

50. On information and belief, Thermo's use of LECO's well-known and patented invention, customers have formed the impression that Thermo has been licensed, has purchased, or otherwise become affiliated or sponsored by LECO to utilize the patented invention.

51. On information and belief, Thermo's unfair competition already has resulted in serious injury to LECO's business position, reputation, and good will, and will result in irreparable injury to LECO unless enjoined by this Court.

PRAYER FOR RELIEF

WHEREFORE, LECO asks this Court to enter judgment in its favor against Thermo Electron and Thermo Finnigan granting the following relief:

A. An adjudication that Thermo Electron and Thermo Finnigan have infringed and continue to infringe claims of LECO's Patent;

B. An accounting of all damages sustained by LECO as a result of Thermo Electron's and Thermo Finnigan's acts of infringement;

C. An award to LECO of actual damages adequate to compensate LECO for Thermo Electron's and Thermo Finnigan's acts of patent infringement, together with prejudgment interest;

D. An award to LECO of enhanced damages, up to and including trebling of LECO's damages pursuant to 35 U.S.C. § 284 for Thermo Electron's and Thermo Finnigan's willful infringement;

E. An award of LECO's costs of suit and reasonable attorneys' fees pursuant to 35 U.S.C. § 285 due to the exceptional nature of this case, or as otherwise permitted by law;

F. A grant of permanent injunction pursuant to 35 U.S.C. § 283, enjoining Thermo Electron and Thermo Finnigan, and their agents, servants, employees, principals, officers, attorneys, successors, assignees, and all those in active concert or participation with them, including related individuals and entities, customers, representatives, OEMs, dealers, and distributors from further acts of (1) infringement, (2) contributory infringement, and (3) active inducement to infringe with respect to the claims of the LECO Patent; and

G. Any further relief that this Court deems just and proper.

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Dated: November 21, 2003

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